

DOCKET NO. D-2011-017 CP-1

DELAWARE RIVER BASIN COMMISSION

PSEG Nuclear, LLC

**Salem Generating Station Cooling Water Intake Structure Detritus Discharge Pipe
Lower Alloways Creek Township, Salem County, New Jersey**

PROCEEDINGS

This docket is issued in response to an Application submitted to the Delaware River Basin Commission (DRBC or Commission) by PSEG Nuclear, LLC (PSEG) on December 15, 2011 (Application), for review of an outfall modification to the existing PSEG Salem Generating Station (Salem GS) Cooling Water Intake Structure (CWIS). NJDEP issued Land Use Permit No. 1704-02-0001.4 CAF10002 & WFD 11001 for the project on October 5, 2011.

The Application was reviewed for addition of the project in the Comprehensive Plan and approval under Section 3.8 of the *Delaware River Basin Compact*. The Salem County Planning Board has been notified of pending action. A public hearing on this project was held by the DRBC on March 7, 2012.

A. DESCRIPTION

1. Purpose. The purpose of this docket is to retroactively approve the construction of a new outfall pipe for the discharge of screen water wash, composed mainly of river-borne debris (grass/detritus), from the Salem GS CWIS travelling screens, referred to as the Salem GS CWIS Detritus Discharge Pipe (DDP) project. A new, approximately 650-ft long 48-inch diameter High Density Polyethylene (HDPE) DDP was constructed to replace two (2) existing 40-inch diameter steel DDPs (former DDPs) that previously discharged the screen water wash on either side of, and immediately adjacent to, the CWIS. The new DDP discharges the wash water 600 feet away from the screens, thus reducing recirculation of the detritus. The two (2) former DDPs are retained for use during maintenance of the new DDP. This docket addresses the CWIS screen water wash discharge only; approvals for the Salem GS and its associated non-contact

cooling water discharge and water withdrawal are addressed via separate DRBC dockets (See Findings Section).

On December 22, 2011, the DRBC Executive Director approved an emergency certificate for this project. The emergency certificate temporarily granted permission to PSEG to proceed with the construction of this project, pursuant to Section 2.3.9.B of the *Administrative Manual, Part II, Rules of Practice and Procedure* (Rules). The new DDP project was completed on February 29, 2012 and went into operation on March 2, 2012.

2. Location. The project is located at the PSEG Salem GS, which is located on Artificial Island in Lower Alloways Township, Salem County, New Jersey. Screen water wash from the Salem GS CWIS will continue to discharge to the Delaware River in Water Quality Zone 5 at River Mile 50.

The project outfall is located in the Delaware River Watershed as follows:

OUTFALL	LATITUDE (N)	LONGITUDE (W)
Former DDPs	39° 27' 39"	75° 32' 11"
New DDP	39° 27' 36"	75° 32' 18"

3. Area Served. The new DDP will continue to discharge screen water wash from the Salem GS CWIS located in Lower Alloways Township, Salem County, New Jersey.

4. Physical features.

a. Design criteria. The former 40-inch diameter DDPs and the new 48-inch diameter DDP are designed to accommodate a maximum flow up to 20,000 gallons per minute (gpm), which equates to 28.8 million gallons per day (mgd). Flow through the DDP during normal operation is 12,800 gpm (or 18.4 mgd). The former DDPs outfall invert elevation is 5.82 (ft-NAVD88). The new DDP outfall elevation is at a location on the Delaware River bottom, approximately at invert elevation -27.0 (ft-NAVD88).

b. Facilities. The Salem GS CWIS withdraws surface water from Water Quality Zone 5 of the Delaware River for the use of once-through non-contact cooling of the Salem GS power generation facilities. The CWIS is equipped with Modified Ristroph travelling screens that are designed to minimize river-borne debris (grass/detritus) and/or fish and other aquatic life from passing through the CWIS and into the non-contact cooling loop. This is accomplished by capturing the detritus/aquatic life on the travelling screens, which is washed off by the screen wash system into a return trough for discharge through the DDP.

The new DDP consists of an approximately 650-foot long, 48-inch diameter HDPE pipe that replaces the two (2) former 40-inch diameter steel DDPs, which are retained for use during maintenance of the new DDP. The existing Salem GS facilities, including the power generation

facilities, once-through non-contact cooling water intake (the CWIS), and non-contact cooling water discharge structure will not be modified as part of the project.

c. **Non-contact cooling water withdrawal / discharge.** The non-contact cooling water withdrawal and discharge is described in detail in DRBC Docket No. D-1968-020 CP Rev 2, which was approved on September 13, 2001. The withdrawal and discharge of non-contact cooling water is not being modified as a result of this docket.

d. **NJPDES Permit / DRBC Docket.** NJPDES Permit No. NJ0005622 for the Salem GS non-contact cooling water discharge does not assign the former or the new DDP outfall a Discharge Serial Number (DSN), and therefore this outfall will continue to not be required to be monitored by the NJDEP. The NJDEP has indicated that the NJDPES permit will not be modified as a result of the project.

e. **Cost.** The overall cost of this project is estimated to be \$1,400,000.

f. **Relationship to the Comprehensive Plan.** The construction of the Salem GS was included in the DRBC Comprehensive Plan by Docket No. D-1968-020-CP-1 on October 20, 1970. A project to modify the Salem GS approval was approved by Docket No. D-1968-020 CP Revised on September 27, 1995. The Salem GS approval was further modified by Docket No. D-1968-020 CP Rev 2 on September 13, 2001. Neither of these three (3) dockets specifically identify nor approve the DDP outfall. These dockets will not be modified as a result of the project.

FINDINGS

The docket holder submitted an application (Application) to the DRBC for approval of the Salem GS CWIS DDP project on December 14, 2011. The project includes the construction of an approximately 650-foot long 48-inch HDPE outfall pipe (referred to as the DDP) from the existing CWIS, extending along the Delaware River bottom, to a point approximately 600 feet offshore. The new DDP replaces two (2) former 40-inch diameter steel DDPs that discharged screen water wash from the CWIS travelling screens on either side of, and immediately adjacent to, the CWIS. The new DDP project was completed on February 29, 2012 and went into operation on March 2, 2012. The project was constructed in order to decrease the amount of debris (grass/detritus) that previously recirculated back to the CWIS travelling screens after screen water wash operations. The two (2) former DDPs are retained for use during maintenance of the new DDP.

PSEG stated in its application that over the last several years there has been a sharp increase in accumulation and collection of marsh grass on travelling screens of the CWIS. This material is washed from the screens and returned to the Delaware River. The operational capability of the Salem GS is dependent on cooling water withdrawn from the Delaware River at its surface water intake. Accumulated detritus clogs the CWIS screens, reducing the surface water withdrawal capabilities of the intake. The project was constructed in order to decrease the

amount of detritus (mainly marsh grass) that previously recirculated back to the CWIS screens after washing operations. Previously, the detritus, which was collected on the existing travelling screens, recirculated back to the CWIS screens as a result of the discharge being located in close proximity to the CWIS. Relocating the outfall for the CWIS screen water wash approximately 600 feet away from the CWIS reduces the recirculation of this detritus.

The Application included a request for emergency approval for the project pursuant to Section 2.3.9.B of the Administrative Manual, Part II, Rules of Practice and Procedure (Rules). PSEG requested emergency approval in order to maintain operational capabilities of the Salem GS during seasonal (mid-February through early May) high levels of detritus that have occurred over recent years. During this time frame, the accumulation and recirculation of the detritus on the CWIS has resulted in reduced surface water intake flow. In addition, the New Jersey Department of Environmental Protection (NJDEP) issued Land Use Permit No. 1704-02-0001.4 CAF110002 & WFD110001 on October 5, 2011 for the project, which prohibits the installation of the DDP during the time period March 1 through June 30 of any given year. The U.S. Army Corps of Engineers (USACE) issued Department of the Army Permit No. CENAP-OP-R-2011 on November 2, 2011 for the new DDP. The USACE permit included timing restrictions that prohibited activity from January 1 until May 31. The timing restriction was modified to prohibit activity from February 29 until May 31 by letter from the USACE dated February 22, 2011. PSEG needed to proceed with construction to complete the installation of the DDP in time for the season of high detritus (mid-February 2012 through early May 2012) and to comply with the timing restrictions in the NJDEP and USACE permits. The Commission's Executive Director granted an Emergency Certificate on December 22, 2011 for the project.

The NJDEP issued Land Use Permit No. 1704-02-0001.4 CAF110002 & WFD110001 for the project on October 5, 2011. NJDEP has indicated that the CWIS discharge is not assigned a DSN in the New Jersey Pollutant Discharge Elimination System (NJPDES) Permit No. NJ0005622 for the Salem GS, and will continue not to be a monitored outfall in the NJPDES permit after the project construction; and therefore, the NJPDES permit will not be modified for the project.

The Commission most recently approved the Salem GS facilities via DRBC Docket No. D-1968-020 CP (REVISION 2) on September 13, 2001, including the surface water withdrawal and discharges associated with the Salem GS. Docket No. D-1968-020 CP (REVISION 2) expires September 13, 2026.

This docket approves modifications to the PSEG Salem GS CWIS DDP only. No other modifications to the Salem GS nuclear power generating facilities, the Salem GS non-cooling water discharge, or the CWIS are proposed. The existing Salem GS CWIS screen water wash will continue to discharge to the Water Quality Zone 5 of the Delaware River at River Mile 50.

The project is designed to produce a discharge meeting the effluent requirements as set forth in the *Water Quality Regulations* of the DRBC.

There are no public water supply intakes downstream of the project discharge.

The project does not conflict with the Comprehensive Plan and is designed to prevent substantial adverse impact on the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

C. DECISION

I. Effective on the approval date for Docket No. D-2011-071 CP-1 below:

a. The project and the appurtenant facilities described in the Section A “Physical Features” of this docket shall be added to the Comprehensive Plan.

II. The project and appurtenant facilities as described in the Section A “Physical features” of this docket entitled “Physical features” above are approved pursuant to Section 3.8 of the *Compact*, subject to the following conditions:

a. Docket approval is subject to all conditions, requirements, and limitations imposed by the NJDEP in its NJPDES permit and Land Use Permit, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission’s.

b. The facility and operational records shall be available at all times for inspection by the DRBC.

c. The facility shall be operated at all times to comply with the requirements of the *Water Quality Regulations* of the DRBC.

d. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

e. Sound practices of excavation, backfill and reseedling shall be followed to minimize erosion and deposition of sediment in streams.

f. Within 30 days of completion of construction of the approved project (by March 30, 2012), the docket holder is to submit to the attention of the Project Review Section of DRBC a Construction Completion Statement (“Statement”) signed by the docket holder’s professional engineer for the project. The Statement must (1) either confirm that construction has been completed in a manner consistent with any and all DRBC-approved plans or explain how the as-built project deviates from such plans; (2) report the project’s final construction cost as such cost is defined by the project review fee schedule in effect at the time the application was made; and (3) indicate the date on which the project was (or is to be) placed in operation. In the event that the final project cost exceeds the estimated cost used by the docket holder to calculate the DRBC project review fee, the statement must also include (4) the amount of any outstanding balance owed for DRBC review. The outstanding balance will equal the difference between the fee paid to the Commission and the fee calculated on the basis of the project’s final cost, using

the formula and definition of “project cost” set forth in the DRBC’s project review fee schedule in effect at the time application was made.

g. The docket holder is permitted to treat and discharge the categories of wastewaters defined in the “Area Served” section of this docket.

h. The docket holder shall make wastewater discharge in such a manner as to avoid injury or damage to fish, wildlife, or aquatic life and shall avoid any injury to public or private property.

i. Nothing in this docket approval shall be construed as limiting the authority of DRBC to adopt and apply charges or other fees to this discharge or project.

j. The issuance of this docket approval shall not create any private or proprietary rights in the waters of the Basin, and the Commission reserves the right to amend, suspend or rescind the docket for cause, in order to ensure proper control, use and management of the water resources of the Basin.

k. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

l. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the Rules of Practice and Procedure. In accordance with Section 15.1(p) of the Delaware River Basin Compact, cases and controversies arising under the Compact are reviewable in the United States district courts.

BY THE COMMISSION

DATE APPROVED: March 7, 2012